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In the Supreme Court of the United States

Festo Corporation.
Petitioner

v.

Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd A/K/A
SMC Corporation and SMC Pneumatics

Respondent

On Petition for Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

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Brief of Amicus Curiae Intellectual Property Creators in support of Festo's Petition for Writ of Certiorari

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Introduction

Intellectual Property Creators (IPC) is submitting an Amicus brief[1] in this case for the same reason we filed a merits brief in the *Dickinson v. Zurko*, 119 S. Ct. 1816, 7 U.S. 150 (1999): Our objective is to present the inventor's perspective on the issue: We strongly believe *Festo* will discourage invention in general, and especially by one of the most productive sources of invention, small entity and entrepreneurial inventors. We emphasize the perspective of the history, sociology and economics of innovation to help the court in understanding the environment of innovation), in which this Court's decision will be interpreted.

Many of IPC's members have been through patent litigation. IPC was founded in 1994.

IPC represents the public policy interests of small entity and entrepreneurial inventors who are usually industry *outsiders* and who are concerned with getting effective legal protection for their inventions. In contrast, Intellectual Property Owners consist, mostly of industry *insiders* for whom a major concern is in protecting existing markets and technologies from business problems created by the innovations of industry outsiders.

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[1] This brief was not authored in whole or in part by counsel for any party other than the Amicus Curiae. Consent to file this Amicus brief has been obtained by both parties.

Three of IPC's five founding board members, Dr. Damadian, Dr. Greatbatch, and Dr. Rines, are inductees into the National Inventors Hall of Fame.

Paul Heckel, the Founder and President of Intellectual Property Creators (IPC), is the principal author of this amicus brief. Other advisors on this brief include people IPC nominated to the Patent Advisory Committee. These anticipated signatories bring diverse backgrounds that are relevant to the invention process. We had hoped to have them as amici on this brief, but time prevented us from getting their consent. They include a historian of technology, a scholar of the invention process, a former patent commissioner, the developer of the first SBIR (Small Business Innovation Research) program, a former congressional aide on patent legislation, the president of a patent insurance firm, an Academy Award winner, a professor of labor law, and an economist. A brief bio of each of these nominees is included in the nomination letter in Appendix V. All but two are inventors with patents; several had to litigate their patents.[2] Several are lawyers.

The IPC earnestly believes that the Federal Circuit *en banc* in the *Festo* decisions will do great harm to the small and independent inventors. By replacing equitable principles with the rigid rules of regulation, the Federal Circuit has created further obstacles to innovation. The IPC respectfully urges this Court to review the *Festo* decisions and restore the Doctrine of Equivalents.

Preamble—Under *Festo* The Wright Brothers' Patent Would Have Been Worthless

When the Wright Brothers applied for their patent their application was rejected by the Patent Office several times for several reasons including the examiner's disbelief in

[2] We understand that IPC made 14 out of about 60 nominations in 2000. No IPC nominees were appointed to the 9 slots in 2000; all were renominated for the 3 available slots in 2001

whether a heavier-than-air machine could fly[3] (at the time flying machines were regarded by the Patent Office the same way they regarded perpetual motion machines—skeptically.)

While the Wright Bothers contributions in making the first successful airplane were many, the crucial one was the invention of wingwarping as a mechanism of control. Wingwarping was a mechanism to warp an airplane's wings to change their angle of attack into the wind so as to bank the airplane to the right or left. This gave the pilot lateral control for turns and let him recover from wind gusts.

In 1907, almost 4 years after Kitty Hawk, Glenn Curtiss, a manufacturer of motorcycles, at the urging of Alexander Graham Bell, decided to enter the business of manufacturing airplanes. He started the Herring Curtiss Company and raised $360,000. By this time the Wright's patent had issued and presented a problem for Curtiss and other airplane pioneers.

Curtiss decided to try to design around the Wright's wingwarping patent. He invented and got a patent on ailerons, which are control surfaces hinged to the trailing edges of wings. The Wrights sued. In one of several lawsuits (*Wright v. Paulhan*), the decision that ailerons were equivalents to the structure claimed in the Wright patent and therefore infringed the patent was rendered by then District Judge Learned Hand who decided many patent cases. The Wright Brothers had had to amend the claims. Had *Festo* been controlling law, they could not have used the Doctrine Of Equivalents and would have lost their infringement case. Their patent would have been worthless.

Certainly, the patent law should not be structured to achieve a particular result in *Wright v. Paulhan* nor any other individual case. We suggest that what happened to the Wright Brothers, is not an example of what Judge Lourie in his concurrence calls "occasional injustices." Rather, it is

[3] See *The Wright Brothers' Pioneer Patent* by Rodney Worrel, Journal of the American Bar Association, 1979, Vol 65, page 1512.

just the tip of the iceberg of the injustices inventors have faced. At Intellectual Property Creators we know scores of independent inventors who have asserted their patents, and found that the Wright Brothers' experience is a common one: Infringers will do all they can, including lobbying the courts, to steal technology especially when the inventor is weak.

The best inventions are likely to come from outsiders who rejected the mainstream wisdom; they are first disbelieved and then robbed. They will face "infringers" who stayed on the sidelines while others took the risks of inventing, and then when success was clear, rolled over the inventors' patents. Many others denigrated the Wrights at the time—Alfred Zahn, Octave Chanute and Augustus Herring. Henry Ford even lent his patent litigator, W. Benton Crisp to Curtiss to defeat the Wrights' patents. Yet the judgment of history is unambiguous in giving full credit to the Wrights.

The Wright Brothers having made one of the most important inventions of this century faced, not only Rambo lawyering by "infringers," but also fraud by Curtiss, supported by the Smithsonian Institution[4].

An Overview Of The Arguments Presented

IPC presents three basic arguments.

I. Festo is Badly Considered.

1. Festo gives high priority to certainty for the "infringer", none to certainty for the inventor.

In *Festo* the court seeks to reduce uncertainty by promulgating rules that remove uncertainty by drawing an infringement line favoring "infringers."

Corporations do all they can to avoid risk and uncertainty, while risk and uncertainty is inherent to what the

[4] The story of what the Wright Brothers faced is given in more detail in Appendix I. For the record, Chief Justice Rehnquist is the ex officio Chancellor of the Smithsonian.

inventor, especially the entrepreneurial inventor, Doctrine Of Equivalents. This is a niche he fills because others avoid it[5]. That Doctrine Of Equivalents does not mean, however, that the courts should foist the dog food of uncertainty off on inventors because they are used to eating it. Indeed, since inventors fill a societal need for risk taking, when an inventor succeeds, it is even more important to reward them lest such a societal need be discouraged.

2. Festo ignores the fact that an "infringer" has greater maneuverability in preparing for potential patent litigation than the inventor.

An "infringer" is like a bird while the patent holder is like a tree. An "infringer" can take out a license, keep outside the flexible bar or (usually) design around a patent to avoid infringement. He[6] has maneuverability. Moreover "infringers" can usually do all this in the full light of day when much more is known than when the patent was filed and the claims written. The inventor in contrast is like a tree stuck where it was planted with its original application and claims.

In patent infringement, as in the law of the sea: the more maneuverable should give the right of way.

[5] Another possibility is a recently identified risk-taking gene, which probably occurs disproportionately in inventors. The biological explanation is that some amount of risk-taking benefits society as a whole.

[6] This brief uses sexist language in that "he" is used where "he or her" was intended. In this, this brief's author has found himself committing the very same offense about which he is writing this brief: thoughtless bias and sloppy thinking that serves to perpetuate a two-tier system of elites and non-elites. In one case the non-elites are women, in the other they are non-establishment inventors. This brief's author apologizes to Justices O'Connor and Ginsberg, the women law clerks, and to all women. We have, however, left it in to draw attention to how such a subtle bias can develop anyplace language is used, such as with judicial decisions.

3. Lourie's concurring opinion in* Festo *wrongly says that a rigid bar encourages people to invent in the area that would have been included within a flexible bar.

The opposite is true: A rigid bar actually discourages invention and associated entrepreneurial startups. It is rather a flexible bar that encourages innovation.

4. Assigning Rights in An Invention (Such As Those Covered By The Doctrine Of Equivalents) To The Public Veils The Real Beneficiary

The real beneficiaries of *Festo* are "infringers" who have the manufacturing, financial and marketing capability to exploit an invention. This is obscured by referring to the rights covered by the Doctrine Of Equivalents as being assigned to "the public".

I. *Festo* Is Bad Policy

1. By Limiting The Scope Of Invention, Festo Takes An Inventor's Private Property Rights

This subverts an important principle underlying the American form of government—private property.

2. Festo discourages one of the most fragile and important sources of inventions: small entity and entrepreneurial inventors.

Small entity inventors have historically made a disproportional share of fundamental inventions, especially high risk, low data, paradigm shifting and disruptive inventions, as opposed to low risk, high data, and non-boat-rocking inventions. Yet small entity inventors usually have limited financial, marketing, and manufacturing capability and so for them a strong patent that gives broad coverage is crucial.

3. By decreasing the scope of* a *patent's protection,* Festo *reduces the diversity of inventions.

A flexible bar increases the scope of an invention's claims and so encourages others to make their inventions at a greater distance from existing inventions. This increases the

diversity of inventions from which the public can choose. With a rigid bar, people are motivated to invent close to existing inventions where a market is proven to exist, thus decreasing the diversity of inventions.

4. Festo makes the patent prosecution process more bureaucratic and expensive.

Inventors will incur extra cost in trying to avoid amending their patent claim so they won't lose the ability to invoke the Doctrine Of Equivalents. This added work decreases efficiency. This appears not to have been considered as this increased cost is borne by the 99 percent of patents that are not litigated. With a flexible bar, on the other hand, the costs of uncertainty are borne during litigation by only the one percent of patents that are litigated.

5. As the Constitution and patent law promises inventors property rights in their inventions, the courts have a legal and moral obligation to enforce those property rights.

In *Festo* the Federal Circuit throws an obstacle in the path of inventors enforcing their constitutional rights.

6. Festo subverts the public policy purpose of the patent.

The Constitution grants inventors the rights to their inventions "To promote the progress of science and useful arts." In denying part of inventors' rights, *Festo* subverts the express intent of the Constitution.

III. The Federal Circuit Is Behaving Like a Regulatory Body That Has Been Co-Opted By Those It Is Supposed To Regulate.

1. From an economic perspective, the Federal Circuit is a regulatory body.

The economics of regulation teaches that regulatory bodies--bodies that determine the rules of market inclusion—develop rules that favor industry insiders and disfavor outsiders. The Federal Circuit, in setting precedents, defines the scope of patents that control entry and exit to those

industry segments where patents are important. *Festo* is the most recent precedent favoring industry insiders.

2. The current software patent crisis is largely a result of industry insider judicial lobbying.

The concept of a co-opted court setting patent precedents favoring industry insiders has happened before.

IV: The Doctrine Of Equivalents Issue Should Be Decided Immediately.

THE ARGUMENTS PRESENTED

I. Festo Is Badly Considered

1. *Festo* Gives High Priority To Certainty For The "Infringer", None To Certainty For The Inventor

Developing and marketing any product is filled with uncertainty. Can it be made to work? Is there a market for it? (e.g., will people buy it?) Will it be profitable? Are there effective marketing channels? Will it infringe other patents? What changes will have to be made to gain market acceptance?

The Wright Brothers saw airplanes used, not as bombers, but for aerial reconnaissance making wars less likely. In the 1969 edition of *The Sources of Invention*, Jewkes, Sawers and Stillerman said that they had decided to exclude the digital computer from its 50 case studies of inventions in their 1958 edition because it wasn't that important. In *The Experts Speak*, Christopher Cerf and Victor Navasky compiled a compendium of embarrassing quotes of authoritative figures. Its quotes on inventions[7] are a useful antidote to those who describe inventions as "obvious." Quotes uttered by Lord Kelvin, Thomas Edison and even Wilbur Wright less than10 years before Kitty Hawk speak to the impossibility of flight in the near future.

[7] Pages 225-281

Once an invention proves to work and a market is shown to exist, established companies will rush to develop similar products now that the uncertainty has been eliminated.

At this point the inventor faces the uncertainty that his patent will be found invalid or not infringed due to prior art of which he was unaware, technical advances, or an inability to raise money to grow a business or sue infringers.[8]

Festo exhibits concern for the uncertainty potential "infringers" face, but does not balance that against the uncertainties that an inventor faces.

2. Festo Ignores The Fact That The "Infringer" Has Greater Maneuverability In Preparing For Potential Patent Litigation Than The Inventor.

An inventor's crucial decisions are made during patent prosecution in the morning twilight, while "infringers" get to make their decisions in the full light of day. Moreover, inventor's decisions are made when success is uncertain and the budget is limited, while the "infringer" makes his decisions after an invention's success is proven, and the budget is ample. This asymmetry of illumination occurs in both defining the limits of a patent's scope during prosecution and in determining obviousness.

According to *Panduit* determining the obviousness of an invention requires that "impermissible hindsight" not be used: An examiner or a court must (try to) remove from its mind any knowledge that was not available when the invention was made. This is difficult to do. It is like after

[8] Deciding to infringe is often a good "business decision" as the "infringer" is usually better financed than the inventor, and litigation has the added advantage to an infringer of diverting an inventor's time and resources from building a business. For the infringer, the downside is losing an infringement case, and the cost of this is often small compared to the benefit of the market share obtained during the litigation.

being told not to think of elephants being able to erase elephants from your mind and not think of them.

Many inventions are obvious once the key ideas have entered people's minds. Orville Wright referred to a passage from Paradise Lost.[9]

> The' invention all admired, and each, how he
> To be the' inventor miss'd, so easier it seemed
> Once found, which yet unfound most would have thought
> Impossible: ...

In biasing the rules so an "infringer" can easily design around a patent, the inventor is forced to fight an unequal battle: the inventor must commit himself in his specification and his claims while he is stumbling around in the morning twilight of his invention usually with little experience in the process. The airplane was the Wright's first patent. "Infringers" (and the courts), get to make their decisions later in the light of day when the prior art and newer technologies have been developed, the initial markets have been developed and so it is much easier to see what is essential to the invention and what is not. Yet, Judge Lourie seems oblivious to the asymmetry of the illumination. In his concurring opinion, he says:

> Any patent attorney who fails to claim all that his inventor has invented, and that is patentable, is ill advised to settle for a narrower claim than he considers justified on the assumption that he can rely on the Doctrine of Equivalents for broader coverage.

But how can he claim all he invented if in the process he risks a rejection, which requires an amendment, which would preclude using the Doctrine Of Equivalents?

The inventor's job is not easy. Judge Learned Hand said the patent was the most difficult contract to draft.

The inventor is stuck with his original specification and his claims written in dawn's twilight.[10] The potential

[9] Milton, *Paradise Lost*, Book 6. See also *Wilbur and Orville*, page 422

"infringer," in contrast, gets to plan his attack in the full light of day when more is known about the invention, related art and possible markets. Moreover, once market risk is eliminated, substantial funds are likely to be available.

Patent Litigation is an unequal and unfair fight. The "infringer" has much maneuvering room. He can stay well outside the limits of the claims rather than risk coming dangerously close, he can license the patent; or he can use non-infringing technologies. According to economist Richard Levin, an analysis of 127 cases of patent infringement showed that the infringer could have achieved designed around the original product in all but 12 cases. Why didn't these "infringers" avoid infringement when they could have? Is it because the patent system is so weak as to be all but useless, or is it because infringers are arrogant and lazy?

The law of the sea requires that more maneuverable vessels yield the right of way to the less maneuverable ones. The same law governs airplanes. When someone designs around someone else's patent, the patentholder has little maneuvering room. The law of patents, like the law of the sea, should favor the less maneuverable.

3. Lourie's Concurring Opinion In *Festo* Wrongly Says That A Rigid Bar Encourages People To Invent In The Area Included Within A Flexible Bar.

The opposite is true: A narrow scope of claim interpretation (such as a rigid bar creates) discourages invention by leaving gaping holes in his protection and increasing the uncertainty that he will profit from his inventive contribution. The Wright Brothers' patent would have been worthless if the court had not held that Curtiss' ailerons were not an equivalent. Innovation is discouraged when people making significant inventions find the courts deny them the property rights to their inventions.

[10] An exception is that during the first 2 years after a patent issues, the inventor may file a broadening reissue.

Far from discouraging invention, a wide scope of claim interpretation, such as a flexible bar creates, encourages inventors to patent inside the broader scope covered by the Doctrine Of Equivalents as it gives them negotiating power--indeed, it is quite common for two companies to have blocking patents on each other. Curtiss, for example, invented and patented ailerons (Curtiss, Patent No. 1,011,106) within the scope of the Doctrine Of Equivalents on the Wright Brothers' patent.

4. Assigning Rights in An Invention (Such As Those Covered By The Doctrine Of Equivalents) To The Public Veils The Real Beneficiary

An inventor faces a major problem in trying to capture a legal right to a substantial part of the economic value of his invention. The normal mechanism for doing this is the claim language of a patent, but such language rarely covers the full scope of the inventor's contribution. For a variety of reasons, such as poor patent drafting, narrow claim interpretation or information just left out of the specification, much of the value of an invention can end in the public domain. While the public is an ultimate beneficiary, the "infringer" benefits two ways: First, the inventions will likely show up in what he makes and profits from.

Second, he denies the inventor a head start in business competition that a patent is supposed to give the inventor. Often the inventor is a single individual that is neophyte in the business world; his expertise is in his inventiveness and technology and he is bound to lose a fight with an "infringer" where the battle is fought on business experience and expertise. To have a reasonable chance of success, an inventor must either have the power of a patent to get a head start so he can learn business skills or hire business expertise and build an organization before having to fight infringers.

But the courts make it difficult for an inventor to enforce his property rights to his inventions in a timely way. This ignores the advice of Machiavelli:

> "But above all things [The Prince] must keep his hands off the property of others.... pretexts for [an infringer's] taking away the property are never wanting; for he who has once begun to live by robbery will always find pretexts for seizing what belongs to others."[11]

In summary, the idea of assigning rights to a new invention to the public, as is done with a rigid bar, is misleading. From a practical point of view, such rights are given to the inventor's competitors to the inventor's great disadvantage. This advances one of the major objectives of large companies: Design Freedom.[12]

II. *Festo* Is Bad Policy

1. By Limiting The Scope Of Invention, Festo Takes An Inventor's Private Property Rights

This subverts and conflicts with private property rights. Under the law of mineral rights, someone who owns the mineral rights in a piece of land does not have to list all the different minerals to which it is claiming rights, it can own rights to all minerals without enumerating those minerals. Yet the requirement of *Festo* in taking such a narrow view of the Doctrine of Equivalents amounts to having to enumerate all minerals to which a right is claimed.

2. Festo Discourages One Of The Most Fragile And Important Sources Of Inventions: Small Entity And Entrepreneurial Inventors.

As an indication of the value of inventions to society, in the year 2000, the United States spends about $75 billion[13] on research and development. In *The Sources of Invention*, Jewkes, et al, ventured a few words for policymakers.[14]

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[11] Machiavelli *The Prince*, Chapter17
[12] Grindly, Peter and David Teece, *Managing Intellectual Capital*, California Management Review, Vol 39, No2. Winter 1997, page 12.
[13] Statistical Abstract of the United States
[14] Page 228

Certain conclusions [can] be put forward with some confidence:

1. The forces which make for innovation are so numerous and intricate that they are not fully understood. ...
2. Governments, therefore, in seeking to encourage innovation should set down as their first aim the avoidance of harm, ...
3. There can be no doubt that some of the ideas [that] have been highly influential in the last two decades have been unsound. They must have done damage either by obstructing innovation altogether or by encouraging it in one form but only at the expense of doing harm to it elsewhere.
4. It cannot be disputed that innovations and discoveries have had, and continue to have many sources. It may be tempting to argue that one or [the] other of these sources is more fruitful than others and should be stimulated even at the expense of the rest. Our impressions are that, given the present state of knowledge, it is safer to strive to keep all the sources open since competition strengthens the total flow of new ideas.

Independent and entrepreneurial inventors are a particularly important source of inventions to encourage, since, compared to corporation, and government funded R&D, they tend to attack different kinds of problems or use different techniques (they are much less formal). They are particularly successful in attacking high risk, low data and paradigm shifting inventions. Strong patents, and a strong Doctrine Of Equivalents are vital for such inventors to succeed. Howard Markey, the founding Chief Judge of the Federal Circuit made this point clearly:

> Many giant corporations have no need of a patent system. They may obtain patents, but only as a defense against some little machine shop operator who might otherwise invent and patent something the public would

> demand and the big corporation would have to negotiate for, instead of just adding the item to its product line. Many large corporations would be glad to compete on size, nationwide service, high volume, strong finance, and prompt delivery. They can kill off smaller competitors on any of those bases, unless the small competitor has a patent on a product somebody wants to buy.[15]

The Wright Brothers took the high risk, low data path of focusing lateral control as the critical factor ignoring the lower risk, path of mainstream wisdom that stability was critical, and therein lay their success.

3. By Decreasing The Scope Of Inventions, *Festo* Decreases The Diversity of Inventions.

The natural tendency is to invent where a market is known to exist and there are less technical risks. With *Festo's* rigid bar, this means inventing just outside the claims where any invention will be less original. The flexible bar encourages others to invent at a greater distance from existing inventions, resulting in greater diversity. This is likely to increase both the number of solutions to a problem, and the number of problems solved.

4. *Festo* Makes The Patent Prosecution Process More Bureaucratic And Expensive.

Under *Festo*, the gamesmanship will increase, as patent prosecutors will have to be careful to avoid amending their patents as this would give up their rights under the Doctrine Of Equivalents. We have heard that patent examiners let marginal claims go through rather than create a bar to the Doctrine Of Equivalents. This would discourage clarifying amendments, lest the inventor lose the Doctrine Of Equivalents. This is inefficient is that this burden occurs

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[15] Some Patent Problems --Philosophical, Philological, and Procedural 80 F. R. D. 203, p. 210

during the application process, rather than during litigation where only one percent of the patents would be involved.

5. As the Constitution and patent law promises inventors property rights in their inventions, the courts have a legal and moral obligation enforce those property rights.

For a patent to serve its purpose it must be respected as property. However, patents, even without *Festo*, unless they have been successfully litigated, are little better than Confederate money. The legal system makes patent enforcement difficult, expensive, time-consuming and uncertain of success. For an independent inventor, trying to use a patent as collateral to raise money to assert one's rights requires finding people who have money, and believe "the South will rise again." This greatly devalues the patent. Corporations, in contrast usually have the financial assets to fight infringement suits. (For more detail see Appendix D.)

Festo just throws one more boulder on the barrier between insiders at a time when Congress and the courts should be removing boulders.

6. Festo subverts the public policy purpose of the patent law, which is to Encourage Invention, Not Provide A Road Map For Copiers.

In reading the *Festo* decision and its quest for certainty one would get the feeling that the objective of the patent law is to provide a roadmap for copiers by removing any uncertainty of what the line of infringement is.

According to the Constitution, the patent system should "promote the progress of science and useful arts." The Doesn't this suggest that where there is doubt in the balance between the inventor and "infringer," the courts should resolve doubt in favor of the inventor?[16]

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[16] This Court should know that two of the Founders, Benjamin Franklin and Thomas Jefferson were inventors of substantial capabilities and so might have caused the Constitution to be 'unfairly biased' in favor of inventors.

6. Small Entity Inventors (A Disproportionate Source Of Inventions And The Natural Prey To Big Companies) Should Get The Benefit Of The Doubt In Patent Cases.

According the Samuelson and Nordhaus:[17]

...Studies indicate that small firms are responsible for a disproportionate share of major inventions and innovations. When John Jewkes and his colleagues traced the history of most important inventions of this century they found that less than half came from the laboratories of large corporations. The importance of the small inventor has been confirmed in recent years by the major new products that seem to arise from nowhere...

It is particularly relevant that the nature of invention is that it generally comes from people who will challenge the mainstream wisdom, and it comes from people who are outsiders the industry involved.[18]

Alcorn's law, named for Al Alcorn a founder of Atari and an inventor of Pong, the first video game, observed that: "All progress is due to people who don't know what they are doing, because if they did they would never take the risks."[19]

III. The Federal Circuit Appears To Be Behaving Like A Regulatory Body That Has Been Co-Opted By Those It Should Regulate.

To an economist, patent law is a special case of the economics of regulation, which involves "the control of process, entry and exit conditions and standards of service." According to Samuelson and Nordhaus:

> We should recognize, however, that regulation creates profits and thereby produces interest groups, which have vested interests in the regulatory outcomes. Sometimes,

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[17] Samuelson and Nordhaus, *Economics* 17th Edition by Samuelson and Nordhaus McGraw Hill. Page 195. Samuelson was the sole author of the earlier editions.

[18] See Intellectual Property Creators, Amicus Brief in *Zurko*, page 23.

[19] Heckel, *The Elements of Friendly Software*, page 293

because of the interaction between regulations and politics, regulation has the perverse result of restricting entry into the regulated industry that actually raises prices and profits for established companies... Economists who emphasize the anticompetitive aspect of regulation make the following argument:

> You say that regulation is in the interest of consumers and workers. Don't believe it. Rather, regulation is designed to boost the outcome to producers in limiting entry and preventing competition in the regulated industry. Any gains to consumers or workers is purely accidental. The historical record shows that there is much truth to this view. ...

A recent example of a regulatory program benefiting the industry at the expense of taxpayers came in the savings and loan industry. ... It provided a governmental guarantee on bank deposits without ensuring that banks behaved prudently with the insured deposits. .... Because of intense lobbying and generous campaign contributions, appropriate government action to stop the wasteful practices was delayed for years. Who were the major beneficiaries of the corrupt regulator regime in the banking industry? Primarily bankers, banks and bank stockholders. Who were the losers? The taxpayers.[20]

IPC's view is that the Federal Circuit is behaving like a regulatory body responding, consciously or unconsciously, to the pressures of industry insiders in creating precedents that favor industry insiders and disfavor the outsiders.

Appendix C describes how this has been happening in post-*Zurko* decisions.

As Judge Young said in *Control Resources*:

> Almost since its inception, the Federal Circuit has been dogged with criticism for straying from the path carefully delineated for appellate tribunals. Disappointed litigants and commentators alike have criticized the court for fact-finding and other forms of hyperactive judging Increasingly, the bar is expressing concern over the court's decision-making procedures and its apparent willingness to take over the roles of patent examiner, advocate and trier of fact. (Citations omitted)

[20] Samuelson and Nordhaus, p 347

1. Ambition Without Power Cannot Counter Ambition With Power.

That interests influence the system to benefit themselves at the expense of others is central to the discussion of the separation of powers in Federalist 51:

> The provision for defense must... be made commensurate to the danger of attack. Ambition must be made to counteract ambition... This policy of supplying, by opposite and rival interests, the defect of better motives, might be traced through the whole system of human affairs, private as well as public [emphasis added]. .... It is of great importance in a republic ... to guard one part of the society against the injustice of the other part.

The courts have often recognized that society is best served if the vulnerable are given a "provision for defense" lest the powerful take advantage of them. This realization first surfaced slowly, usually in dissents.[21]

Inventions come disproportionably from small inventors. The complexities and uncertainties of litigation, low barriers to entry of nascent markets, and the asymmetry of power all make them vulnerable. Worse yet, the rules are determined less by nature then by industry insiders. As Nicola Machiavelli said:

> There is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things. For the reformer has enemies in all those who profit by the old order, and only

[21] Holmes in *Lochner v New York*, 198 U.S. 45 (1905) (USSC+), or Harlan in *Plessy v. Ferguson*, 163 U.S. 537 (1896)

> lukewarm defenders in those who would profit by the new order; this lukewarmness arising partly from fear of their adversaries, who have laws in their favor; and partly from the incredulity of mankind who do not truly believe in anything new until they have had actual experience of it.

In a conflict between insiders and outsiders, ambition without power is insufficient to combat ambition with power.

IV: The Doctrine Of Equivalents Issue Should Not Be Left to Fester

Festo is festering; not only is it ripe for consideration, rot is setting in. The difficulties and expense for inventors, patent lawyers, and patent examiners is increasing. *Festo* will, like prohibition, fester until it is carefully considered. Undoing *Festo* will be a major undertaking if not done now. It could do as much or more damage than the flip-flops of *Gottschalk v. Benson* and *Diamond v. Diehr* and the 18th and 21st Amendments did. History suggests that this Court should act now rather than wait and lett the issue continue to fester.

Conclusion

For the reasons set forth above, IPC respectfully requests the Supreme Court grant certiorari in *Festo*

APPENDIX

Appendix A: Inventing the Airplane

On Saturday, August 8, 1907, at about 6:30 p.m. Wilbur Wright ciimbed aboard his Wright flyer on a racetrack near Le Mans, France. Many had heard of the Wright Brothers' claims to having built successful flying machines, but most thought their claims were bluff. Over the previous few years more and more aviators had built and flown airplanes -- the previous month Louis Blériot had flown for 8-1/2 minutes.

Four years earlier, the Wrights made their famous 59-second flight at Kitty Hawk. Although they had notified the press, except for a few inaccurate stories, the press ignored their flight, probably because many fliers had made claims that proved false. Only a few weeks earlier, Samuel Pierpoint Langley, astronomer, head of the Smithsonian Institute, and the leading aviation researcher, after getting a $50,000 Congressional appropriation, had spent several years developing and then test flying his Aerodrome. It failed ignominiously, belly flopping into the Potomac causing those in the establishment to doubt flight was possible in the foreseeable future.[1]

The Wright Brothers, working outside the mainstream of aviation research, had built the plane they flew at Kitty Hawk for about $1100 (to Langley's $50,000). They had rejected the mainstream wisdom, which was that the key problem was achieving aircraft stability. Researching the problem, the Wright Brothers concluded that the establishment wisdom was wrong: the key problem was

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[1] " According to the *New York Times* of December 10, 1903, "We hope that Professor Langley will not put his substantial greatness as a scientist in further peril by continuing to waste his time and the money involved in further air experiments. Life is short, and he is capable of services to humanity incomparably greater than can be expected to result from trying to fly. For students and investigators of the Langley type there are more useful employments with fewer disappointments and mortifications than have been the portion of aerial navigators since the days of Iccarus."

achieving lateral control of the plane. Once that problem was solved, other problems such as stability would fall into place. They pursued this wingwarping concept starting with kites, then unmanned gliders, then manned gliders and finally, at Kitty Hawk, powered manned gliders.

The Wrights made many important inventions to build a working airplane, but the major one was wingwarping. It is the concept used in all fixed wing airplanes today. After Kitty Hawk the Wright Brothers spent the next several years at Hoffman Field in Dayton, greatly improving their airplane, getting a patent, and observing that none of the other airplane enthusiasts seem to have been working on the key problem of control. They deliberately kept a low profile--once other aviators saw them fly, the key principle would be obvious.

The Wright Brothers decided to go public: Wilbur at Le Mans in Europe and, a few days later, Orville in the United States. Wilbur took off at a racetrack near La Mans in France in front of a crowd of a few hundred people who came to see various air exhibitions. After taking off, Wilbur, banked to the right and headed for a grove of poplars. The crowd gasped. Having seen the terrible control of other airplanes, the crowd expecting him to crash into the poplars. Bur Wilbur banked right again made a full circle and landed near where he took off. They flight lasted 1 minute and 45 seconds.

The crowd went wild. They could only appreciate what the Wright Brothers had done when they could evaluate it in front of the background of its absence. Wilbur's plane had flown like a bird. As one pilot, Paul Zens, said that day, "Mr. Wright has us all in his hands". Over the next several months, Wilbur gave exhibitions throughout Europe, often carrying passengers. The Wrights were widely honored in both Europe and America. Fliers everywhere began modifying their planes to incorporate what they learned from observing the Wright airplanes.

Two bicycle mechanics from Dayton, outsiders to aviation, with limited funds and rejecting the mainstream wisdom of the nascent field of aviation, had rocketed past well-financed insiders.

But would they reap a financial reward for their invention? Didn't the Founders instigate the patent system to reward such inventors? It was not that simple. The principle of wingwarping was impossible to keep secret. The nature of the market for the airplane was still uncertain. The mainstream wisdom was that airplanes would advance the cause of peace--reconnaissance airplanes would make it possible to observe one's enemies. The idea of dropping bombs came along later, suggesting the difficulty writing a patent application.

Glenn Curtiss founded the Herring-Curtiss Company in 1909 to manufacture airplanes. The Wright brothers sued him for patent infringement and won. He decided on another tack to get rid of the Wright Brothers' patent. While Langley whose Aerodrome flight in 1903 had proven such a dismal failure, he was now dead; the Smithsonian had an institutional interest in glorifying Langley's place in aviation. So they let Curtiss rebuild and test fly Langley's heavily damaged plane to see if it would have flown in 1903. If it could be flown, that could be used to invalidate the Wright Brothers patent.[2]

Curtiss did not just reconstruct the plane, but, deceitfully, and with the knowledge of aeronautics gained in the intervening years, Curtiss made several changes from the original design that improved its aerodynamics. Even with the modifications, whether or not the Aerodrome flew is a matter of controversy. It took off just outside of camera range. The Wrights called Curtiss on his deceit and the controversy of who flew first continued. It was finally

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[2] Most of the information in this Appendix was taken from *Wilbur and Orville* by Fred Howard, and *The Bishop's Boys* by Tom Crouch.

settled in 1942 when the Smithsonian published an article, which detailed the changes in the design and admitted the Wright Brothers were indeed first. By that time Wilber had been dead for 30 years. He died of typhoid fever in 1912—Orville always felt that the stress of their patent litigation, weakened Wilbur and thus main him vulnerable to typhoid fever. Later Orville left the airplane business selling their patent rights for about $1.5 million dollars—a large sum in those days, but barely enough to pursue a patent lawsuit today.

Appendix B: The Software Patent Crisis: A Case Study Of The Damage Done By Unchallenged Lobbying Of The Judiciary By Powerful Interests To Set Patent Precedents.

An example of the great damage done by unchallenged industry lobbying on patent jurisprudence occurred with the patentability of software as a result of lobbying efforts by IBM.[1]

In his book,[2] this brief's author described what happened: In the late 1960s when IBM's internal policy was that software should not be patentable. Shortly thereafter, IBM

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[1] We understand that IBM will be filing an amicus brief with this Court. It had filed one with the Federal Circuit in *Festo* in which it cited its invention of the computer disk (2,810,900) as evidence of its expertise in innovation. We present some additional facts so this Court can put IBM's contribution and business policies in perspective: In *Inventing for Fun and Profit (San Francisco Press, Inc, 1990)*, the well known inventor Jacob Rabinow describes his invention of the disk drive (Patent Number 2,690,913) and his unsuccessful attempts to sell it to IBM several years before IBM introduced its first disk drive the RAMAC. (Page 47)

In explaining the history of IBM's development of the disk drive, Jewkes et al, quote Congressional Committee testimony:

> The disk drive memory unit, the heart of today's random access computer is not the logical outcome of a decision made by IBM management. It was developed in one of our laboratories as a bootleg project—over the stern waning from management that the project had to be dropped because of budget difficulties A handful of men ignored the warning. They broke the rules. They risked their jobs to work on a project they believed in.

[2] *The Elements of Friendly Software* by Paul Heckel, Sybex, 1991.This Court should know the way this brief's author was treated by IBM when he attempted to enforce his patents against IBM, has both biased him against IBM (See A Case Study in Defending One's Rights: Negotiating with IBM in that book) and motivated him to pursue public policy inventor issues.

vice president, J. W. Birkenstock, chaired a presidential commission on the patent system that recommended that software should not be patentable. We expect that the other commission members deferred to IBM's expertise on software, just as members of a commission designing an aviary would defer to its most knowledgeable member on birds: the cat.

Congress rejected this view, but three paragraphs of the Commission's recommendations (e.g., IBM's corporate policy) found their way into *Gottschalk v. Benson*, the Supreme Court Decision that limited the patentability of software. At this time IBM had 70% of the computer market, so it is not surprising that CBEMA, the Computer Business Equipment Manufacturers Association filed an amicus curiae brief against software patents in *Benson*.

From this historical perspective we can see that the conventional wisdom that "software has not been patentable," should be more accurately stated, as "it was not in the interest of IBM or other computer manufacturers for people to think software is patentable." We have never seen it pointed out in the debate on software patents that the idea that software is not patentable subject matter was formed in the crucible of IBM's self-interest and corporate policies of an earlier time.

IBM and CBEMA have now rejected [this view]. But the damage has been done. The PTO and the industry have not taken software patents seriously until recently, which explains the problems the PTO has had in examining patents and the prejudice against software inventors who assert their patent rights. Many in the software community have been suckered into believing software should not be patentable, while IBM has aggressively but

quietly been getting software patents and become the company with the largest software sales.[3]

Donald Chisum, who we understand will be filing an amicus brief in *Festo* on behalf of Chiron, has described the legal history of software patents in some detail.[4] We believe had *Gottschalk v. Benson* held software patentable; the computer industry would have evolved differently with less concentration of power and less turbulence. We do not believe, for example that one company, Microsoft, which has not been innovative, would have been so dominant.[5] Interestingly, Justice Douglas, the author of *Gottschalk v. Benson*, was one of the two dissents in *Graver Tank*, a dissenting opinion whose reasoning is resurrected in the *Festo* opinion.[6]

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[3] Heckel, Paul, *Debunking the Software Patent Myths*, Communications of the ACM, June 1992.

[4] Chisum, D. The patentability of algorithms, 47 U Pitt. L Review, 959,971, (1986)

[5] To those of us in the personal computer industry, Microsoft has always been a copier and not an innovator. This point is reflected in an Amicus Brief, William Nordhaus filed with the Court in U.S. v. Microsoft.

> "the innovation defense - as a variant of the "good trust" gambit (7) - was central to AT&T's arguments during its antitrust case. Yet it was not sufficient to prevent this District Court from ultimately concluding that a breakup was warranted. Second, while we do not gainsay Microsoft's impressive talents in developing and marketing software, Microsoft's innovations pale beside those of the Bell System.

[6] That Justice Douglas who seems to have so often been the advocate of the little guy in many areas has consonantly been anti-patent in his decisions is at first perplexing. However, one explanation may be that Justice Douglas, who headed the Securities and Exchange Commission, before he ascended to the Bench, had much experience with the machinations of big corporations to defraud the powerless. He saw patents only as a weapon big companies wield to maintain their market power (which they certainly do) but not as powerful stimulants to the powerless to develop new inventions and new industries.

In deciding how much IBM's self-interest is restrained by ethics, this Court is referred to the recently published *IBM and the Holocaust: The Strategic Alliance between Nazi Germany and America's Most Powerful Corporation.*[7]

[7] (At the time the Catholic parents of the author of this brief were acting as sponsors so a Jewish Family could escape to this country from Nazi Germany, Thomas Watson and IBM were actively helping the Nazi's annihilate Jews. Knowing my parents, Oskar Schindler, and thousands of other little people took a stand against the forces of evil, helped motive me to pursue the Quixotic fight for justice for independent inventors.)

Appendix C: Recent Federal Circuits Cases Narrowing The Scope Of Patent Claims *Zurko* And Means-Plus-Claims

The Federal Circuit has taken several opportunities to narrow the protection inventors get. One example of such a case is *Dickinson v. Zurko.* The Federal Circuit in a 12-0 decision ruled that the standard of review of patent validity as *de novo* rather than according to the Administrative Procedures Act which requires deference to agency decisions. The APA review is preferable for inventors (as we argued in our amicus brief on *Zurko*) as it increases certainty, as the case Doctrine Of Equivalents s not have to be retried in a district court infringement action or at the appellate level. The time and cost of these duplicative ad judicatory procedures are particularly devastating to small entity inventors and other outsiders who can ill afford the time (the patent term is running out), money and uncertainly involved. This Court overturned the Federal Circuit in *Zurko,* a direct appeal case. However, the Federal Circuit declined to apply the *Zurko* standard of review to cases on appeal from district courts. In *Purdue Pharma* the Federal Circuit found that *Zurko* was not applicable. In *Winner v. Wang* the Federal Circuit refused to apply *Zurko* on an appeal from an interference hearing. *Zurko* has become useless to inventors. It applies in the rare cases of direct appeals from the PTO to the Federal Circuit on patent validity, but not on appeals from the district courts in infringement cases where validity is almost always challenged.

Another area where the Federal Circuit has narrowed patent scope to take inventors rights away is in means-plus-function claims[1]. Here the Federal Circuit held that a means

[1] See *Valmont Indus., Inc. v. Reinke Mfg. Co.,* 983 F.2d 1039 (Fed. Cir. 1993)

plus function claim Doctrine Of Equivalents s not mean what it means in a plain English. Rather, it must be narrowed, not by the prior art, but to the specific means described in the patent application.

Appendix D: How Legal Complexity Creates A Two-Tier System Of Justice

Excessively complex legal processes that effectively eliminate one's legal rights to property occur in many places and times. Generally the effect is to have the legal system that on a practical basis creates a two tiers system of insiders who comply with one set of laws, while requiring outsiders to comply with another set of laws. Historically this two-tier system has been enforced by seemingly impartial, but in fact discriminatory requirements against blacks (requiring as condition of voter registration that an applicant's grandfather have been registered), or women (requiring jobseekers to have certain, unnecessary, qualifications).

Appendix III lists several examples of such insider outsider divisions. A particularly egregious example of a complexity barrier creating a two-tier system at great economic cost to society is the barrier between the elite and the poor in Third World Countries. The Peruvian economist Hernando deSoto describes the tremendous cost of this barrier in a book, *The Mystery of Capita, a book that* contained jacket blurbs from Milton Freedman, Margaret Thatcher, Walter Wriston and Javier Perez de Cuellar. Hernando deSoto set out to discover "why capitalism triumphs in the West and fails everywhere else." He found that the problem was the excessively bureaucratic legal mechanisms for securing private property rights that courts would enforce. These mechanisms act like spider webs entrapping all the little insects, but lets the big ones break through. deSoto surveyed five Third World cities to determine both the complicity involved in securing rights and the value of what he calls hidden capital-- capital represented by property and businesses that were not registered with the state.

According to deSoto "In Egypt, for example, the wealth that the poor have accumulated is worth fifty-five times all

the direct foreign investment recorded there, including the Suez Canal and the Aswan dam." He found that the total worldwide hidden capital was about 9.7 trillion dollars. According to deSoto "What they [the poor] did not get were the mechanisms that could have allowed them to fix the economic rights over their assets in representations protected by law.[1]" In his book he gives several charts detailing the complexity of obtaining such rights.[2]

This complexity barrier is not confined to Third World Economies. It was a problem in the United States[3] well into the nineteenth century. An inventor must surmount a similar barrier to get legal recognition of his property rights in a timely and inexpensive way. The barrier consists of the excessive rules and bureaucracy of the patent system,[4] the plethora of judicial precedents, the unpublished decisions, which cerate private law that helps sustain the two-tier system of patent law, and the need to prove the validity of a patent three times[5]. The current system is expensive, time-consuming, uncertain and unfair. Its cost in inventions that never came to market because they could not be collateralized or were not pursued due to the legal complexities and uncertainties must be huge, albeit hard to measure. But given the 9.7 trillion dollars in hidden capital deSoto uncovered, one would not be surprised if it reached into the hundreds of billions of dollars.

This two-tier system creates an unconscious bias that influences judicial decisions. IPC's Amicus brief IPC in *Zurko* provided empirical evidence that the courts had a large

[1] Page 466

[2] See, for example, page 192: Figure 6.3: The 728 bureaucratic steps required by the municipality of Lima to obtain legal title to a home that is in a validated housing settlement.

[3] See Chapter 5: The Missing Lessons of U.S. History.

[4] See for example, *The Long walk form the Gobi Desert to the River Styx* by Joseph Hotany, Intellectual Property Today, and January 2001.

[5] In the PTO, in the District Court and then in the Court of Appeals where it is reconsidered *de novo*.

bias against small entity in favor large companies. Of the 14 cases decided by Federal Circuit, the inventors lost 13.[6]

All this suggests that outsider inventors have much less success in raising investment funds, developing their inventions and marketing their inventions because of the difficulties the legal system imposes which hurts them much less than it does large companies.

[6] It is telling that one winner, Dr. Raymond Damadian, the inventor of Magnetic Resonance Imaging, had 8 years earlier lost an infringement suit on the same patent and on the same claims. In the interval between lawsuits he had been inducted into the National Inventors Hall of Fame and received the National Medal of Technology from President Reagan.

Appendix E: Table Of Insider/Outsider Legal History

This table shows how throughout history barriers have developed separating elite insiders from outsiders, which often led to the insiders exploiting the outsiders.

Insider Outsider Economics

Event (Actor)	Decision maker	Insider Beneficiaries	Outsider casualty	Ultimate loser	Barrier Mechanism
England (Parliament)	Parliament	Those purchasing monopolies	Mercantile Class	The public[1]	Exclusion
Turn of Century Trusts (Roosevelt)	Congress, T. Roosevelt	Robber Barons	Competitors	The public	Restraint of Trade
Industry Regulation (Stigler[2])	Regulatory agencies	Industry Insiders	Industry Outsiders	The public	Regulatory agency
Professional Societies (Stigler)	Professional Society	Accredited Professionals	Outsider Professionals	The public	Accreditation process
Capitalism in Third World Countries (deSoto[3])	Third World Legal Systems	Elite insiders	Poorer Classes	The public, nation	Excessive bureaucracy, complex legal system
Patents	Federal Circuit, Congress	Non-innovative Industry Insiders	Innovative Outsider Inventors	The public	Patent jurisprudence, Patent Prosecution

[1] The public is the ultimate loser. The outsiders' economic loss is greater than the insiders' economic gain.

[2] Stigler, George, *The Theory Of Economic Regulation*, Rand Journal of Economics, Spring 1971 pp 3-21

[3] deSoto, Hernando, The Mystery of Capital, BasicBooks, 2000

Appendix F: Letters Nominating People To The Patent Advisory Board

Mr. Nicholas Flagler
Office of the Commissioner
United States Patent and Trademark Office
Washington, DC 20231

April 28, 2000

Dear. Mr. Flagler:

I am writing you on behalf of Intellectual Property Creators to make several nominations to the Patent Advisory Committee

Intellectual Property Creators is a non-profit inventors public policy organization founded in 1995. Our directors include Inductees to the National Inventors Hall of Fame. Our interest is to see that small entity entrepreneurial inventors are protected by a strong and effective patent system. Our focus is in two primary areas:

- Educating Congress, the press, and the public about patent issues relating to inventors.

- We file Amicus briefs with the courts including one with the U.S. Supreme Court.

We have reviewed the qualifications specified in the Federal Register Notice (posted at www.uspto.gov/web/offices/com/sol/notices/pubadvcom.pdf). We assume that the main objective of the committee is to encourage innovation and its commercialization.

In this light, I wish to provide background information in several areas that should be helpful in selecting the members of the Patent Advisory Committee. This is largely a personal view, but it is based on my experience in these issues going back to 1991 when I provided comments for the Mosbacher Commission on Patent Reform. For information supporting what follows please see our website or ask me.

1.**Outsiders v. Insiders**. To understand how innovation, especially fundamental innovation, and the patent system work, one must understand the conflict between entrenched interests who have markets to protect, and inventors whose inventions threaten existing markets. It is a classic battle of outsiders versus insiders. Innovation is a hostile act as it threatens the status quo and those who benefit from it. This explains the fundamental differences between the U.S. patent system and the European and Japanese ones. The European patent system was developed so as to ensure it would create a minimal threat to entrenched interests, while the U.S. system was developed at a time when the entrenched interests (Tories), having lost the Revolutionary War, were out of power and those in power had few interests to protect, but a vast future to develop. And so U.S. patents were designed to be stronger and America became the source of much of the world's technical progress.

Many of the issues the Advisory Committee will consider will set the ground rules in the war between the well-represented entrenched interests of established technologies and companies and the poorly represented interests of future technologies entrepreneurial startups.

2.Large vs. Small company inventors. The conflict between entrenched interests and challengers is often perceived as a large vs. small issue. While much innovation comes from large companies, most innovation, especially fundamental innovation, comes from small entity inventors and small companies, as they are more willing to challenge established interests and mainstream wisdom, often though naivety. Big companies don't like innovation they cannot control as next quarter's results are going to be determined much more by how well they protect their existing markets than in introducing invention-- especially invention which disrupts their business models. Thus Advisory Committee members representing large companies are going to be more experienced in and concerned about protecting existing markets and business models than encouraging new ones.

3.Most of the combatants don't understand the battlefield. It is sad that in such an important area of public policy as innovation and patent policy, few participants understand how the battles are fought. Specifically:

a. It is rare that a corporate CEO understands and provides oversight on patent issues. They usually defer to his general counsel or chief patent counsel, who often make recommendations based on parochial interests.

b. Most inventors are naive about the issues because they don't experience the problems until they try to enforce their patents or get involved in litigation. This happens to relatively few inventors, and then only late in the life of an invention. Yet what happens in these conflicts determines the basis on which patents are respected and valued.

c. Most of the members of the patent bar are involved in writing patent applications and so are mainly interested in knowing what procedures to follow. Everyone seems to assume that someone else is minding the store.

4.Entrepreneurial inventors. Half of the fundamental inventions come from inventors who become entrepreneurs and start companies to pursue their inventions. Small entity inventors founded the Colossi of American industry--IBM, GE, Dow, and others. I suggest that Advisory Commission members will find it useful to understand the dynamics of such companies in their entrepreneurial birth rather than their dotage. Advisory Committee members should have expertise in how the patent system encourages or discourages entrepreneurial success. This is particularly important as small entity entrepreneurial inventors rarely have much money or a sophisticated understanding the patent system, yet these are those most in need of its protection.

5.The Inventor Constituency. Few people who invent see themselves as inventors, at least not until later in their careers. They do not see themselves as in the business of inventing. Rather they consider themselves as software developers, electrical engineers, medical researchers, automobile mechanics, or entrepreneurs. They see inventing as something they do to advance their visions, like accounting or sales. They see the patent application process as a bunch of annoying paperwork. For this reason, identifying experienced inventors is hard to do. Inventor groups throughout the country are usually experienced in the early stages of invention but are naive as to what it really takes to bring a product to market or enforce a patent. It is difficult to find people with relevant experience to provide mature advice on inventor issues.

6.The Invention Process. To be effective, the Advisory Committee must understand the invention process, from creating an idea to testing it, to patenting it, to starting a company based on it, or otherwise bringing it to commercial reality and finally to defending the invention against "infringers" once its value is proven in the marketplace. The

Advisory Committee needs expertise as to how Patent Office policies and litigation can encourage or discourage invention.

7.Lawyers vs. Inventors. The patent advisory Committee is, if history is a guide, in great danger of overly representing patent lawyers. The interests of lawyers are in ambiguity, complexity and advancing their own interests, rather than in clarity, simplicity, efficiency and equitable resolution of issues. They earn a living as lawyers and that affects their perspective. The result has been a jurisprudence that addresses the interests of lawyers more than inventors, good public policy, or even "infringers"

8.History of Advisory Committees. There were at least two earlier (temporary) Patent Advisory Committees: one was formed in 1966 and another in 1991. Both committees were populated almost entirely by big company representatives and lawyers and their recommendations led to many of today's problems.

a. The 1966 Committee under J. W. Birkenstock of IBM made several recommendations to Congress none of which were enacted into law. One of the recommendations was that computer software not be patentable. Their recommendation was quoted in the Gottschalk v. Benson Supreme Court decision, which led the interpretation, by the patent bar that software was not patentable. This position was IBM's internal policy, and J. W. Birkenstock who chaired the Commission was IBM's vice president in charge of Intellectual Property. As a result of this decision many inventions were not patented and without patent protection, product development entrepreneurial startups were discouraged. An erroneous view that software was not patentable subject matter developed, and continues to this day. As software patents were not being granted, the major source of prior art for patent examinations, prior patents, was not developed leading to the present Patent Office problems

in examining software related patents. All this could be attributed to the self-interest of one large corporation.

b. The 1992 Report of the Patent Reform commission appointed by Secretary of Commerce Mosbacher made several recommendations but Congress did not accept them. This commission vividly demonstrated a gross bias in favor of big companies. None of the 14 commission members was an inventor. Six of the 14 members represented "industry." Three represented the (patent and antitrust) bar. One represented Small Business, but I understand that he only showed up for one meeting. Two members ostensibly represented the public; both were lawyers: one was a former chief of patent litigation for A. T. & T. who represented A. T. & T. as a member of the Board of Directors of NCR. A former chief patent counsel for General Electric ostensibly represented academia. The other representative of academia, Ed MacCordy, was the only one to actually represent the interests of inventors and he refused to sign the report.

9.Committee members must be inventors. Fortunately, Congress seems to have learned from these fiascos. While there was much in the recently passed patent law, its plain words required that Patent Advisory Committee members represent large and small entity applicants. Applicants are inventors. Only they, and not their employers can apply for a patent. This derives from the Constitutionally explicit grant to inventors of the exclusive rights to their discoveries. (We would have preferred that the legislation allowed 2 or 3 members of the Advisory Committee to represent interests other than inventors.)

10.Corporate Inventors. Undoubtedly one of the issues considered by the Committee would be whether or not corporate inventors should receive royalties from their inventions, as do inventors in Germany and the Czech Republic. As such, expertise in this area should be

represented on the Committee. Employees are a great source of inventions in areas outside of their work, yet corporations often insist on ownership of the inventions but do not pursue them commercially. The committee will want to consider how such inventions can be effectively commercialized and this might be by giving rights to their inventors.

11. PTO operations. Obviously a major concern of the commission should be the efficient and effective operation of the Patent Office. Currently the Patent Office has numerous areas where improvements could be made. Inventors who have used the Patent Office have used its good and bad sides should be represented on the committee.

12.Effect of Zurko and the APA. As a result of the Supreme Court decision in Zurko, the procedures of the Patent Office are under the purview of the Administrative Procedures Act. As a result, the Advisory Committee will likely consider changes in Patent Office procedures and policy involving the APA. Moreover, the idea of using the APA instead of the courts as a mechanism to adjudicate patent issues may be an idea whose time has come. For example, should claim interpretation be a matter for the Patent Office or a specialty patent court to determine? Committee members who are knowledgeable about the APA would be useful. Not only is APA expertise rare in the patent bar, but the patent bar has actively resisted its use.

13.Enforcement of Patents-- The committee should consider the patent system as a whole and not just the Patent Office operations. As such the Advisory Committee will likely have to consider issues such as how effective the district courts are in enforcing patents, especially those held by small entity entrepreneurial inventors. Our research (see our Zurko Amicus Brief) shows that the district courts are

strongly biased against small entity inventors. (We have a study that showed that 13 of 14 inventors who litigated their patents against big companies lost.) We believe this is mainly due to the fact that the courts are not knowledgeable or experienced in either technology or patent law. Eliminating this bias should be a major objective the Advisory Committee. Should patent claim interpretation be decided by an administrative agency with special expertise in technology and patents (such as the PTO)? Should specialty patent courts determine it? Is there another solution? Or should small entity inventors be denied patents as they would in practice be unenforceable and good public policy dictates that such inventors not waste their efforts tilting at windmills.

14.Antitrust and Small entity inventors. There appear to be several cases of large companies colluding to defeat inventors' interests. The committee might want to consider laws that would discourage such collusion.

15.Nurturing inventions. Inventions involve the birth and nurturing of new ideas. As such it would appear that the legal environment must be a nurturing one, rather than a draconian one that is dangerous for an inventor's well being

Currently, the courts appear to be interpreting the patent laws, especially with regard to entrepreneurial inventors, in a draconian fashion.

This list is not meant to be exhaustive. For example, there are biotech and software issues the Advisory Board will want to consider. We are particularly concerned with assuring that the members of the Patent Advisory Committee bring a broad perspective to the issues it addresses.

I am sure that several resumes of distinguished lawyers and businessmen who have never invented anything will be presented for consideration as committee members. In considering which people to recommend, it might be useful to consider a conversation between then Vice President Lyndon Johnson and Sam Rayburn that, I believe, David Halberstam describes in *The Best and the Brightest*. Johnson rhapsodized to Rayburn about all the Harvard professors that Kennedy was bringing into his administration. After listening for a while, Rayburn told Johnson, "All the same, I wish that just one of them had run for dogcatcher." If the Advisory Committee is to be successful, I suggest it needs members who have personal experience with the crucial realities of the situations in which their recommendations will be implemented.

With these concerns in mind we nominate the following people, all of whom have consented to be nominated:

1. **Donald Banner** was Patent Commissioner under President Carter where his accomplishments including introducing the reexamination process that moved much of the process of deterring patent validity from the courts to the Patent Office. A fighter pilot in World War II, he was a corporate patent counsel for Borg Warner. After leaving the Patent Office, he became a principal in the law firm Banner, Birch, McKie and Beckett (now Banner and Witcoff). He was a founder and early president of the IPO. Unlike many of his colleagues, he opposed the recent patent law as being against the interests of inventors and the United States.

2. Dwight Bauman, Sc. D is Professor of Engineering Design at Carnegie Mellon. He holds several patents in automotive, aircraft, neural networks and other areas. He

founded the first innovation incubation center in the United States in 1970. In 1973 the National Science Foundation was asked by OMB to investigate this type of experimental innovation mechanism. As a result Dr. Bauman developed what has became the model for the SBIR programs. Dr. Bauman is being awarded an honorary Doctorate of Law by the University of North Dakota for his work in product liability reform and innovation centers. He has taught entrepreneurship, innovation, and product design at MIT and Carnegie Mellon for almost 40 years. He has been involved in helping formulate and pass legislation.

3. **Paul Crilly, Ph. D** is Associate Professor of Electrical and Computer Engineering at the University of Tennessee. As an inventor, he holds 3 patents; two as an employee of Hewlett Packard. He was Chief Science Advisor for Congressman Dana. Rohrabacher Chairman of Space Subcommittee in 1994-5, where his major focus was on patent legislation.

4. **Robert Fletcher** is President of Intellectual Property Insurance Services Corporation, which primarily focuses on insuring intellectual property, both from enforcement and defensive perspectives. Previously, he was employed in investment banking and in developing licensing and enforcement programs for intellectual property. In this capacity, he funded start-up development companies through a multiplicity of financial vehicles and he managed patent litigation. He is a patent attorney with more than twenty-five years of experience in all phases of patent practice including serving in the patent departments of Standard Oil (Indiana) and General Electric. He holds three technical utility patents, two of which were used in the early Apollo missions. He also pioneered patent enforcement insurance, not just as a business instrument, but also as an

entrepreneurial startup. The unique combination of these experiences affords him the ability to voice the concerns of 1) Large corporations, 2) Investment banks, 3) the Insurance industry, 4) Entrepreneurs, and 5) Individual patentees.

5. Richard Grant is the inventor of a film composer's time processor for which he won an Emmy in 1985 and an Academy Award for scientific achievement (1987). His company, Auricle, markets his invention to the film industry. He sued a Fortune 500 company for infringement and received a successful settlement just prior to trial. He is currently involved in further litigation on this patent. Richard Grant holds a B.A. in Philosophy (UCLA 1967) and a Juris Doctorate (Loyola University 1972). He retired from full-time practice as a litigator in early '83 in order to pursue a more creatively rewarding career in software development and design. Mr. Grant is called upon to adjudicate computer software related disputes brought before the American Arbitration Association.

6. Jack Miller is president of Design Technology Corporation and has 115 issued patents of which about 50 are in lighting, optics and fiber optics. He is president and founder of Nouvir Research, which develops display lighting, much of it used by major museums. Earlier he was Supervisor of the Guidance & Control Division of Jet Propulsion Labs. He has served as an expert in 24 patent cases and 8 product liability cases. He wrote and prosecuted to issue over 100 of his patents. In 1997 he authored a monograph entitled "A Proposal to Modify the United States Patent and Trademark System."

7. Arnold Newman Ph. D. is an inventor on 15 patents, and an engineer entrepreneur who has started 3 companies since leaving Johns Hopkins University Applied

Physics Laboratory in 1986. He is president of Synexus Corp. a technology assessment, transfer and development company offering licensing, and marketing and patent research services. He testified before Congress on prior user rights in 1994.

8. Neal Orkin is a professor of Labor law at Drexel and a professional arbitrator. As an Electrical Engineer he has been very interested in the rights of inventors under labor law. He has written on how the U.S. law could be changed so that corporate inventors can get the same rights to royalties for their inventions, as do inventors in Germany and Sweden. Of particular interest is his experience with the Administrative Procedures Act to which the National Labor Relations Board has long been subject and which the PTO is now subject as a result of *Zurko*. He has recently completed a critical study of the Czech law of employee inventions in which he proposed changes in the structure of administrative review similar to that in Zurko.

9. David Pressman is an electrical engineer, a former patent examiner and patent lawyer with 40 years experience mostly in industry. He holds 2 patents. He is now in private practice with a clientele of small entity and small entity inventors. He is the author of the highly regarded *Patent it Yourself* (Nolo Press) that is far and away the leader in self-help patent law books. He was the attorney of record on the IPC brief to the U.S. Supreme Court in *Zurko*.

10. Martin Reiffin has 12 patents, 4 pending applications, and 22 licensees. He has earned his living for the last 20 years as an inventor. He is currently involved in patent litigation against Microsoft to enforce one of his patents. At IBM, he was involved in high profile patent and patent interference litigation. While at IBM, Mr. Reiffin was

one of four attorneys in a committee to advise IBM's J. W. Birkenstock on the patentability of software. (Mr. Birkenstock overruled the advice of Mr. Reiffin and that committee in making his decision that IBM's policy was to oppose the patentability of software.)

11. Robert Scott Root-Bernstein, Ph. D. is Professor of Physiology at the University of Michigan. He holds 1 patent and has 4 patents pending. A MacArthur fellow, and scholar of the invention process, he wrote *Discovering: Inventing and Solving Problems on the Frontiers of Scientific Knowledge*. He has experience with both corporations and universities involving innovation policy. Currently he is working on alternative approaches to curing AIDs. He is particularly interested inability of universities to effectively commercialize their patented research results.

12. Autumn Stanley is the author of *Mothers and Daughters of Invention*, a 600-page history of women inventors throughout history. She would bring a valuable perspective to the Advisory Committee as she has documented the work of an important class of inventors and so is intimately familiar with the invention process from conception to recognition. She personally knows over 100 woman inventors.

13. **Peter Theis** is an inventor with 23 U.S patents. He founded Conversational Voice Technologies to develop and market his inventions including interactive voice response technology (voice mail being an early application). He has been in litigation with the telephone companies and their major suppliers for eight years since they sued him after he attempted to license his patent portfolio to that industry. . He has real world experience with jury trials regarding patents, bringing patent matters to the CAFC and the Supreme Court,

and malpractice and undisclosed conflicting attorney-client relationship with adverse parties, including one of the litigating phone companies. Mr. Theis is an engineer, has a Masters Degree in Business Administration and is a non-practicing lawyer.

I will be happy to provide you with any additional information on any of the above you might wish.

Sincerely yours,

Paul Heckel, President

Enc: Zurko brief
Resumes of all Nominees
Discoveries (Separately shipped)
Mothers and Daughters of Invention (Separately shipped)

Cc: Secretary of Commerce Daley
Commissioner of Patents Dickinson
IPC website

[1] Two examples of a nurturing legal environment are child labor laws that prevent children from freely contracting for their services and the First Amendment, which together with disallowing prior restraint encourages the weak to express their opinions in the face of powerful interests.

Mr. Nicholas Flagler
Office of the Commissioner
United States Patent and Trademark Office
Washington, DC 20231

June 15, 2000

Subject Nomination of Professor William D. Nordhaus

Dear. Mr. Flagler

I realize that it is past the formal time for nominations tot hat Patent Advisory Committee. However, I wish to bring to your attention William Nordhaus as a potential member. In brief William D. Nordhaus is a Professor of Economics at Yale and is a member of the Brookings Panel on Economic Activity, He was a Member of the U.S. President's Council of Economic Advisers, and a Vice President for Finance at Yale, His many books include Invention, Growth and Welfare and (joint with Paul Samuelson) the classic textbook, Economics. Much of his work has been in the economics of patents and technological change.

Dr. Franco Modigliani, the Nobel Laureate in Economics who organized the letter against passage of the patent bill, suggested him. I think it is highly desirable that an economist be on the committee and Dr. Nordhaus seems to be exceptionally relevant [sic] qualified.

I have talked to Dr. Nordhaus and he is quite interested in serving although he Doctrine Of Equivalents has some concerns about the time it might take. You can find more information on Professor Nordhaus at ww.econ.yale.edu/~nordhaus/homepage/homepage.htm

I would hope it would be possible to consider this belated nomination.

Sincerely yours,

Paul Heckel